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NASA Procedural Requirements

COMPLIANCE IS MANDATORY**NPR 8705.4**Effective Date: June 14,
2004Expiration Date: June 14,
2009[Printable Format \(PDF\)](#)

Subject: Risk Classification for NASA Payloads

Responsible Office: Office of Safety and Mission Assurance[| TOC](#) | [Preface](#) | [Chapter1](#) | [Chapter2](#) | [AppendixA](#) | [AppendixB](#) | [AppendixC](#) | [ALL](#)

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CHAPTER 1. General Information

1.1 Overview

1.1.1 NPR 7120.5, NASA Program and Project Management Processes and Requirements, defines acceptable risk as "Risk that is understood and agreed to by the program/project, Governing Program Management Committee (GPMC), Enterprise, Centers, and other customers sufficient to achieve defined success criteria within approved level of resources."

1.1.2 All parties are better able to understand the acceptable risk associated with a program or project when authorization documents and Level 1 requirements include information regarding the relative risk level.

1.1.3 The basic assurance principles and practices associated with the different risk classification levels as indicated in Appendix B are included to further strengthen the understanding and communication at all levels of the NASA organization and program/project teams.

1.2. Risk Classification Development

1.2.1 As early in the formulation process as possible, the Enterprise shall establish an acceptable risk classification level for each NASA and NASA-sponsored payload. As with all requirements, the risk classification level may evolve throughout the iterative formulation process, but shall be formally documented and approved in program/project plans and Level 1 requirements prior to the Preliminary Design Review and transition into the implementation phase ([Requirement 32906](#)).

1.2.2 For consistency in definition, four risk levels or classifications have been characterized in Appendix A. The classification levels define a hierarchy of risk combinations for NASA payloads by considering such factors as criticality to the Agency Strategic Plan, national significance, availability of alternative research opportunities, success criteria, magnitude of investment, and other relevant factors.

1.2.3 Any equipment that constitutes a payload, or part of a payload, may be separately classified. For example, a Class A satellite may incorporate multiple instruments individually classified A through D.

1.3. Assurance Program Development and Implementation

1.3.1 With the acceptable risk classification level established, using Appendix B as the guideline, the project can define and apply the appropriate management controls, systems engineering processes, mission assurance requirements, and risk management processes. Guidelines for safety, mission assurance, design, and test are provided in Appendix B.

1.3.2 Centers and Enterprises shall develop or update policies, standards, and/or guidelines to adapt and expand upon the examples in Appendix B for the unique needs of their programs and projects ([Requirement 32911](#)). Each subset of guidelines described by the examples in Appendix B is intended to serve as a starting point for establishment of assurance criteria, mission design, and test programs tailored to the needs of a specific project.

The intent is to generate discussion of implementation methodologies in order for the programs, projects, Centers, the GPMC, and the Enterprise to make informed decisions.

1.3.3 In all cases, this does not limit or constrain the flexibility of a project to deviate from the guidelines, provided that the concurrence and approvals of cognizant Center organizations, GPMCs, and the Enterprise offices are obtained for the specific project approach ([Requirement 32912](#)).

1.3.4 Regardless of risk classification level designation, all payloads should be developed using sound management, engineering, manufacturing, and verification practices.

1.3.5 All programs/projects shall conform to all applicable NASA safety requirements ([Requirement 32914](#)).

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